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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,853	02/07/2001	Hiroyuki Fujisaki	202866US0	3374

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EXAMINER
LISH, PETER J

ART UNIT	PAPER NUMBER
1754	7

DATE MAILED: 02/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/777,853	Applicant(s) FUJISAKI ET AL.	
	Examiner Peter J Lish	Art Unit 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 December 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Applicant's arguments with respect to claims 1-3, 7-9, and 13-17 have been considered but are moot in view of the new ground(s) of rejection.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3, 7 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "a metal oxide containing at least one of the elements of the platinum group" is indefinite as to whether a platinum group oxide is meant.

Claims 15 and 24-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) The limitation of claim 15 states that the organic compound(s) are present in a concentration of less than 1% by volume in a gas. However, it is unclear what is meant by organic compound(s). This is heightened by the disclosure involving the gas stream containing

organic component(s), wherein the raw gas stream may contain other components, such as 'hydrocarbons' (page 9, 4th full paragraph). Why are these not 'organic compounds'?

b) The phrase "may be substituted by..." in claims 24 and 25 is indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Plank et al. (USPN 4,141,859). Plank et al. disclose a catalyst system containing two catalysts. One catalyst is a conventional catalyst composition comprising a platinum group metal on a carrier material, preferably alumina. The other catalyst is an aluminosilicate zeolite with a platinum group metal supported on a carrier material, such as alumina. The system may have between 1-100% of either catalyst composition. Furthermore, it is taught that the conventional catalyst composition is placed upstream of the zeolite catalyst composition (see Examples 5 and 8).

Regarding claim 3, the weight percentage of zeolite in that particular catalyst composition ranges up to about 25%.

Claim Rejections - 35 USC § 103

Claims 1-4, 7-10 and 13-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patil et al. (USPN 5,125,231).

Patil et al. disclose a catalyst system for the catalytic combustion of gaseous organic compounds. The first catalyst of the system is capable of converting hydrocarbons and carbon monoxide to water and carbon dioxide. The preferred noble metal catalysts are platinum and

palladium deposited on a high surface area material such as alumina. The second catalyst of the system comprises molecular sieves or zeolites, a catalyst (preferably a noble metal such as platinum and/or palladium), and a ceramic binder and at least one porous oxide of high surface area. The preferred binders are the aluminas (column 5, line 47 to column 6, line 61). The zeolites make up between 1 and 95 % by weight of the second catalyst (column 8, lines 43-45). It is further taught that the noble metal salts are preferentially deposited on the high surface area binder rather than on the zeolites themselves (column 7, lines 18-23).

The molecular sieves are preferably those zeolites having a SiO2 to Al2O3 molar ratio which exceeds about 10. Furthermore, the high-silica zeolite compositions described in USPN 4,257,885 and incorporated by Patil et al. are exchanged with alkali metals and alkaline earth metals, including those of calcium.

Concerning claims 14 and 16, the gas treated by the catalyst system of Patil et al. comprises a variety of volatile hydrocarbons with a vapor pressure of 0.01 kPa or higher at a temperature of 293.15 Kelvin, including those containing C_2.

Regarding claims 2 and 8, Patil et al do not specifically teach the weight ratio of the first catalyst to the second catalyst, however, the decision to use the catalysts in a ratio of between 2:1 and 1:20 is obvious in so far as they treat the same gas. Furthermore, the selection of a particular ratio is deemed to be the optimization of a known process, held to be obvious by In re Boesch (205 USPQ 215) unless unexpected and significantly different results are obtained.

Regarding claims 13 and 17, Official Notice is taken that automobile exhaust is known to contain trace amounts of organohalides. Halogens, mainly chlorine and bromine, enter

combustion process of an automobile through fuel, especially leaded fuel, and through trace amounts of water in the fuel.

Claims 5-6 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patil et al. as applied to claims 1 and 7 above, and further in view of Mizukami et al. (USPN 5,780,102).

Patil et al. does not disclose the use of rare earth metals in the production of the catalyst system, therefore it is expected that they are present in a concentration of less than 1%. Further, the alumina is taught to porous, however no specific limitations on the porosity of the alumina are taught.

Mizukami et al. teach a process for producing an alumina material which is useful as catalyst supports for automobile combustion exhaust gas purification. They teach that the specific surface area must be high, and the pore sizes accordingly low, in order to provide high performance. Examples 5 and 6 teach a pore distribution having sharp peaks at 108 Angstroms and 110 Angstroms respectively. This corresponds to a uniform grain size and a high specific surface area (Table 1). It is expected that these sharp peaks contain pores that are +/- 25 Angstroms from the peak value and that these pores make up 65% of the total pore volume. Alternatively, because Mizukami et al. teach the use of a narrow pore size distribution, the claimed pore size distribution of the alumina material is deemed to be an optimization of a known process and is held to be obvious by In re Boesch (205 USPQ 215) unless unexpected and significantly different results are obtained.

It would have been obvious to one of ordinary skill at the time of invention to use the alumina material of Mizukami et al. in the process of Patil et al. in order to provide a high-performance alumina catalyst support which allows for a reduction in the usage of noble metal catalyst.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 3,656,915; USPN 3,899,444; USPN 5,928,981; USPN 6,074,973; and USPN 5,244,852.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 703-308-1772. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 703-308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-305-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

PL
January 21, 2003

STUART L. HENDRICKSON
PRIMARY EXAMINER